A B S T R A C T

A system for operating automatically on the basis of source code (17) submitted by users to generate optimized code (19) suitable for running on a predefined hardware platform (90) including at least one processor (91), comprises means (51, 52) for receiving symbolic code sequences or benchmark sequences (1) representative of the behavior of the processor (91) in terms of performance for a predetermined field of application; means (53) for receiving static parameters (2), means (55) for receiving dynamic parameters (7), an analyzer device (10) for establishing optimization rules (9) on the basis of tests and measurements of performance established using the benchmark sequences (1), static parameters (2), and dynamic parameters (7); a device (80) for optimizing and generating code that receives firstly the benchmark sequences (1), and secondly the optimization rules (9) to examine user source code (17), detect optimizable loops, subdivide them into kernels, assemble and inject code for delivering optimized code (19); and means (74) for reinjecting information coming from the device (80) for generating and optimizing code and relating to the kernels back into the benchmark sequences (1).